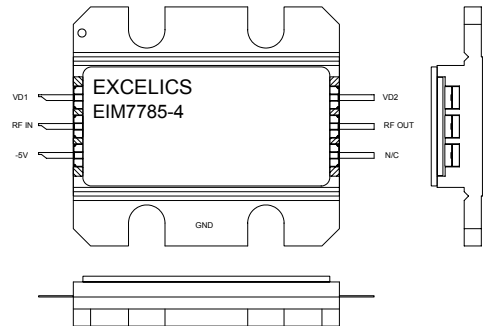


### FEATURES

- 7.70– 8.50GHz Operating Frequency Range
- 35.5dBm Output Power @1dB Compression
- 33.0 dB Typical Power Gain @1dB gain compression
- -45dBc Typical OIM3 @each tone Pout 23.5dBm
- Non-Hermetic Metal Flange Package

### APPLICATIONS

- Point-to-point and point-to-multipoint radio
- Military Radar Systems



Caution! ESD sensitive device.

### ELECTRICAL CHARACTERISTICS (Tb = 25 °C, 50 ohm, VD1=7V, VD2=10V, Vgg=-5V)

SYMBOL	PARAMETER/TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>F</b>	Operating Frequency Range	7.7		8.5	GHz
<b>P1dB</b>	Output Power @1dB Gain Compression	34.5	35.5		dBm
<b>G1dB</b>	Gain @1dB gain compression	28	33		dB
<b>ΔGain</b>	Gain Flatness		±1.5		dB
<b>OIMD3</b>	Output 3 <sup>rd</sup> Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 23.5dBm	-42	-45		dBc
<b>Input RL</b>	Input Return Loss		-12	-8	dB
<b>Output RL</b>	Output Return Loss		-15	-10	dB
<b>VD1</b>	Drain Supply Voltage 1		7		V
<b>VD2</b>	Drain Supply Voltage 2		10		V
<b>I<sub>DQ1</sub></b>	Quiescent Drain Current 1		380		mA
<b>I<sub>DQ2</sub></b>	Quiescent Drain Current 2		1800	2000	mA
<b>Vgg</b>	Gate Supply Voltage		-5		V
<b>Rth</b>	Thermal Resistance		3.4		°C/W
<b>Tb</b>	Operating Base Plate Temperature	- 30		+ 80	°C

Note: Turn on/off sequence is required: ---to turn on: apply -5V on Vgg first, then +7V and +10V.  
 ---to turn off: turn +7V and +10V off first, then turn -5V off



# EIM7785-4

UPDATED 12/06/2007

## 7.70– 8.50GHz Multi-Stage Power Amplifier

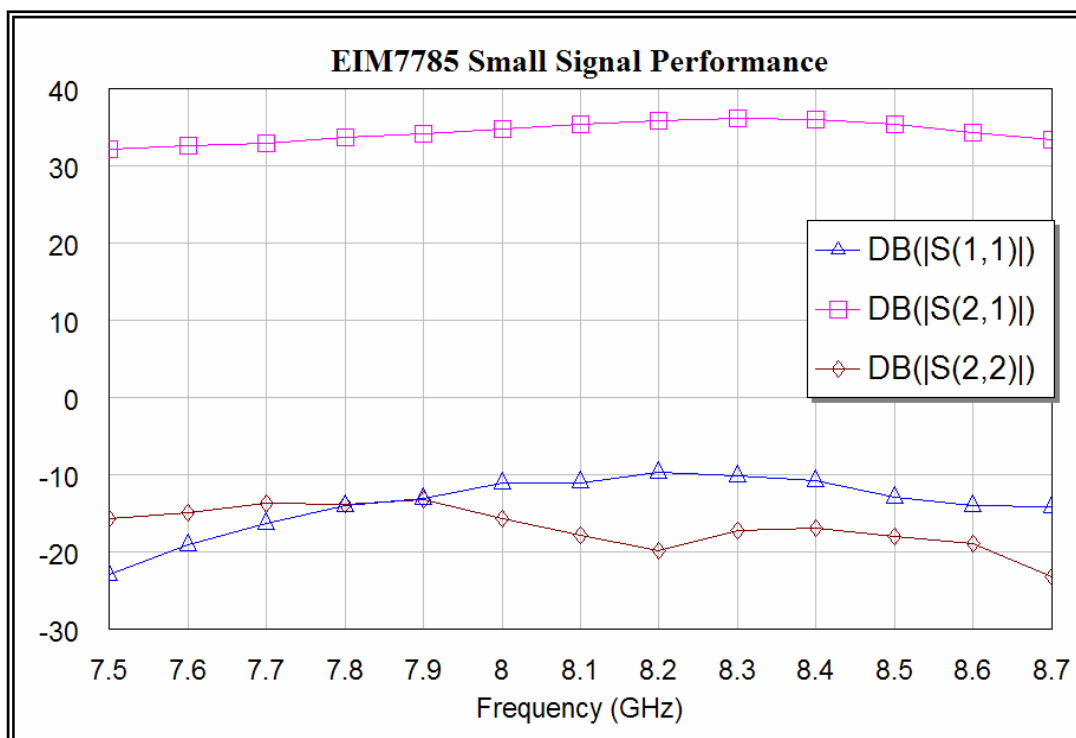
### MAXIMUM RATINGS @25°C<sup>1,2</sup>

SYMBOL	CHARACTERISTIC	ABSOLUTE	CONTINUOUS <sup>1,2</sup>
V <sub>D1</sub>	Drain Supply Voltage 1	12V	8V
V <sub>D2</sub>	Drain Supply Voltage 2	14V	10V
V <sub>gg</sub>	Gate Supply Voltage	-10V	-6 V
I <sub>gg</sub>	Gate Current	150mA	50 mA
P <sub>IN</sub>	Input Power	20dBm	@ Pout 1dB compression
T <sub>CH</sub>	Channel Temperature	175°C	175°C
T <sub>STG</sub>	Storage Temperature	-65/175°C	-65/175°C
P <sub>T</sub>	Total Power Dissipation	37.5W	37.5W

Notes: 1. Operating the device beyond any of the above rating may reduce MTF and cause permanent damage.  
 2. Bias conditions must also satisfy the following equation  $V_{dd} \cdot I_{dd} < (T_{CH} - T_b) / R_{TH}$

### Typical Performance:

#### 1. Small Signal Performance (@V<sub>d1</sub> = 7V, V<sub>d2</sub> = 10V, I<sub>d1</sub> = 380mA, I<sub>d2</sub> = 1800mA)

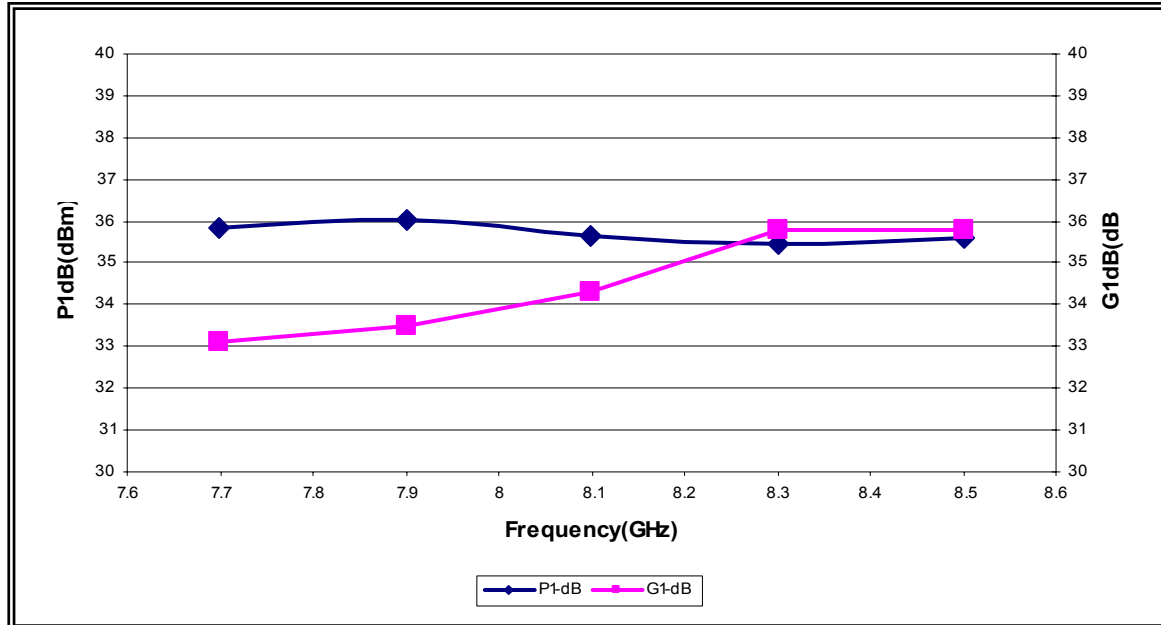


Specifications are subject to change without notice.

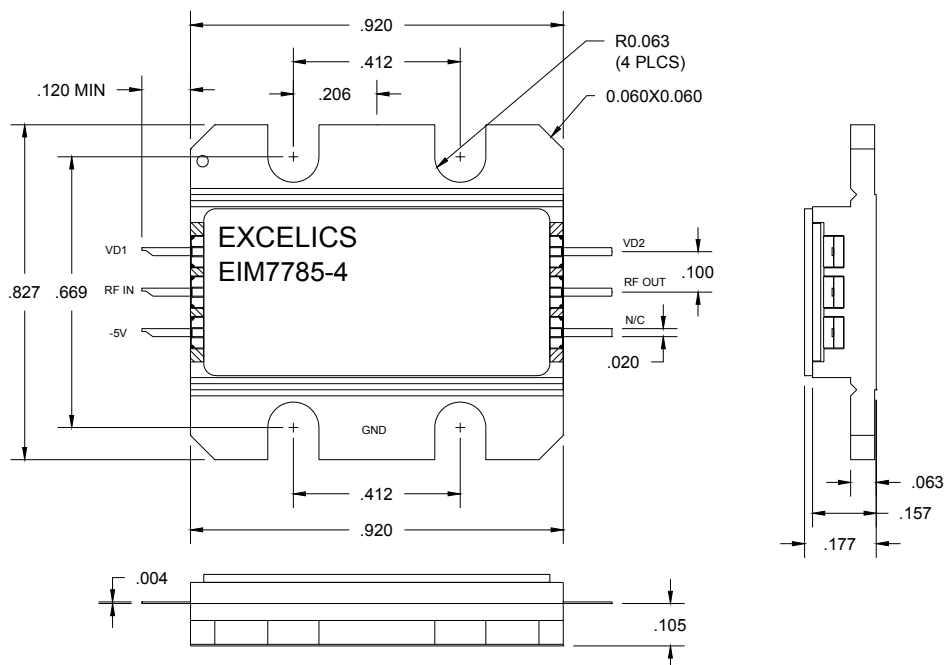
UPDATED 12/06/2007

## 7.70– 8.50GHz Multi-Stage Power Amplifier

### 2. P1-dB & G1-dB (@ $V_{d1} = 7V$ , $V_{d2} = 10V$ , $I_{d1} = 380mA$ , $I_{d2} = 1800mA$ )



### Package Dimension and Pin Assignment

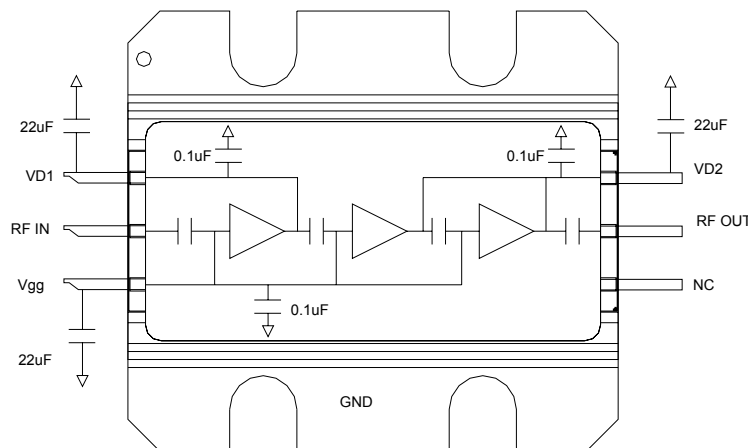


Dimensions are in inches  
\* NC: No connection inside the package

Specifications are subject to change without notice.

### Application Note

1. The package should be screwed onto a good heat sink and ground
2. Turn on/off sequence is required:
  - to turn on: apply -5V first, then +7V and +10V.
  - to turn off: turn +7V and +10V off first, then turn -5V off
3. Recommended External Bias Circuit and Internal Block Diagram



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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.